

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 18 JAN 2002

12

Applicant's or agent's file reference WSR-24-PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/23805	International filing date (day/month/year) 30 AUGUST 2000	Priority date (day/month/year) 30 AUGUST 1999
International Patent Classification (IPC) or national classification and IPC IPC(7): D01F 9/12 and US Cl.: 423/447.2, 447.3		
Applicant WESTINGHOUSE SAVANNAH RIVER COMPANY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 30 MARCH 2001	Date of completion of this report 26 DECEMBER 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer STUART HENDRICKSON <i>Stuart Hendrickson</i>
Facsimile No. (703) 305-3230	Telephone No. (703) 308-0661

I. Basis of the report

1. With regard to the elements of the international application: *

☒ the international application as originally filed☒ the description:pages 1-11, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____☒ the claims:pages 12, as originally filedpages NONE, as amended (together with any statement) under Article 19pages NONE, filed with the demandpages NONE, filed with the letter of _____☒ the drawings:pages 1-9, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____☒ the sequence listing part of the description:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of _____2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. statement**

Novelty (N)

Claims 1 and 3

YES

Claims 2

NO

Inventive Step (IS)

Claims 1 and 3

YES

Claims 2

NO

Industrial Applicability (IA)

Claims 1-3

YES

Claims NONE

NO

2. citations and explanations (Rule 70.7)

Claims 1 and 3 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the surface area or catalyst treatment or conditions (gradient) claimed.

Claim 2 lacks novelty under PCT Article 33(2) as being anticipated by Alig et al.

Alig teaches in example 6 growing carbon fibers using iron catalyst and sulfur. As sulfur is disclosed in the specification as a deactivating agent, it is deemed to have the same effect in the Alig process.

Claims 1-3 meet the criteria set out in PCT Article 33(4), because the process and product have industrial applicability to make a hydrogen sorbent.

----- NEW CITATIONS -----

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 2 and 3 are objected to as lacking clarity under PCT Rule 66.2(a)(v) because practice of the claimed invention is not enabled as required under PCT Rule 5.1(a) for the reasons set forth in the immediately preceding paragraph.

The claims recite dissolution and diffusion of the carbon in the catalyst, however there is no evidence that this highly implausible mechanism is correct. The diffusion rate of a solid in a solid is notoriously low and does not appear to occur within the experimental parameters (ie, time) recited. It appears merely that carbon fouls the catalyst surface.

Claim 2 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because the claim is indefinite for the following reason(s):

Claim 2 recites dissolving the carbon within the hydrocarbon. This is unclear, because there is no carbon except that which is part of the hydrocarbon compound. Thus, the claim recites a mechanism which does not make sense. It is not clear how many carbon sources there are, nor what carbon is meant in line 5.